

REMARKS

Summary

Claims 1-8 and 10-20 stand in this application. Claims 1, 11 and 17 are currently amended. No new matter has been added. Support for the current amendments may be found at least at Applicant's Specification, page 6, lines 1-24. Favorable reconsideration and allowance of the standing claims are respectfully requested

35 U.S.C. § 103

At page 3, paragraph 5 claims 1-8 and 10-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Pub. No. 2002/0191533 to Chini et al. (hereinafter "Chini") in view of U.S. Patent Pub. No. 2003/0072379 to Ketchum (hereinafter "Kethchum"). Applicant respectfully traverses the rejection, and requests reconsideration and withdrawal of the obviousness rejection.

The Office Action has failed to meet its burden of establishing a *prima facie* case of obviousness. According to MPEP § 2143, three basic criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success

must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

As recited above, to form a *prima facie* case of obviousness under 35 U.S.C § 103(a) the cited references, when combined, must teach or suggest every element of the claim. See MPEP § 2143.03, for example. Applicant respectfully submits that the Office Action has not established a *prima facie* case of obviousness because the cited references, taken alone or in combination, fail to teach or suggest every element recited in claims 1-8 and 10-20. Therefore claims 1-8 and 10-20 define over Chini and Ketchum whether taken alone or in combination. For example, claim 1 recites the following language, in relevant part:

the selected subcarrier is punctured prior to transmission by placing no modulated data or information in the selected subcarrier after the selection of the subcarrier to maintain or reduce transmitted power of the selected subcarrier and transmitted power is re-allocated to information carrying subcarriers to increase the signal-to-noise ratio of the communication link.

As correctly noted in the Office Action, the above-recited language is not disclosed by Chini. According to the Office Action, the missing language is disclosed by Ketchum at paragraph 18. Applicant respectfully disagrees.

Applicant respectfully submits that Ketchum fails to disclose the missing language of the claimed subject matter. For example, Ketchum at the given cite, in relevant part, states:

In one technique, data for each transmission channel may be coded, modulated and allocated a power level based on the channel's CSI. By coding, modulating and allocating power separately for each transmission channel, the coding, modulation and the allocated power may be optimized for the SNR achieved by each channel. In one implementation of such a technique, a fixed base code is used to encode data, and the coded bits for each transmission channel are then punctured (i.e., selectively deleted) to obtain a code rate supported by that

channel. In this implementation, the modulation scheme for each transmission channel is also selected based on the channel's code rate and SNR. (Emphasis added).

As indicated above, Ketchum arguably discloses puncturing by placing a reduced amount of bits into each transmission channel by selectively deleting bits from a transmission channel to obtain a particular code rate for the channel. Ketchum clearly states that "data for each transmission channel may be coded, modulated and allocated a power level." By way of contrast, the claimed subject matter punctures by "placing no modulated data or information in the selected subcarrier after selection of the subcarrier to maintain or reduce transmitted power of the selected subcarrier and transmitted power is re-allocated to information carrying subcarriers to increase the signal-to-noise ratio of the communication link."

Applicant respectfully submits that Ketchum fails to disclose the claimed subject matter. For example, Ketchum arguably fails to teach or suggest puncturing by placing no modulated data or information in the selected subcarrier after the selection of the subcarrier to maintain or reduce transmitted power of the selected subcarrier. The technique described in Ketchum selectively deletes bits within a transmission channel in order to reach a desired code rate, but arguably continues to place modulated data and information into the punctured channel at a reduced rate.

Further, Ketchum fails to select a subcarrier to puncture by placing no modulated data or information in the selected subcarrier. As indicated above, Ketchum codes, modulates and allocates a power level for "each transmission channel." Ketchum also states that "the coded bits for each transmission channel are then punctured." It is clear that Ketchum punctures each transmission channel and fails to disclose the selection of a

subcarrier to puncture. Therefore, Ketchum fails to disclose, teach or suggest the missing language. Consequently, Chini and Ketchum, whether taken alone or in combination, fail to disclose, teach or suggest every element recited in claims 1.

For at least these reasons, Applicant submits that claim 1 is patentable over the cited references, whether taken alone or in combination. In addition, claims 11 and 17 recite features similar to those recited in claim 1. Therefore, Applicant respectfully submits that claims 11 and 17 are not obvious and are patentable over the cited references for reasons analogous to those presented with respect to claim 1. Accordingly, Applicant respectfully requests removal of the obviousness rejection with respect to claims independent claims 1, 11 and 17. Furthermore, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. *See* MPEP § 2143.03, for example. Accordingly, Applicant respectfully requests withdrawal of the obviousness rejection with respect to claims 1-8, 10, 12-16 and 18-20 that depend from claims 1, 11 or 17, and therefore contain additional features that further distinguish these claims from the cited references.

Conclusion

For at least the above reasons, Applicant submits that claims 1-8 and 10-20 recite novel features not shown by the cited references. Further, Applicant submits that the above-recited novel features provide new and unexpected results not recognized by the cited references. Accordingly, Applicant submits that the claims are not anticipated nor rendered obvious in view of the cited references.

Applicant does not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the dependent claims discussed above. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references, taken alone or in combination, based on additional features contained in the dependent claims that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

It is believed that claims 1-8 and 10-20 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

The Examiner is invited to contact the undersigned at 724-933-9338 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to deposit account 50-4238.

Respectfully submitted,

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/Robert V. Racunas/
Robert V. Racunas, Reg. No. 43,027
Under 37 CFR 1.34(a)

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